

Serial No. 09/545,888
Docket No. F-10110

2

IN THE CLAIMS:

Please amend the claims to read as follows:

1. (Currently amended) A network switching system, comprising:
 - a gateway;
 - one or more extension nodes, each selectively identified with a unique telephone number; and
 - a serial bus interconnecting said gateway and said one or more extension nodes, wherein stream data transferred on said serial bus are exchanged through said gateway between an outside line and an extension node, or between a first extension node and a second extension node,
 - wherein at least one said extension node comprises:
 - a control/memory unit for storing physical identifiers and telephone numbers of said gateway node and extension nodes and for controlling said network;
 - an asynchronous interface, for selecting said extension node and controlling a switching timing, connected with said control/memory unit;
 - a rate conversion unit for converting a data rate of said stream data in said network into that in said outside line, or for converting a data rate of stream data in said outside line into that of said network switching system; and
 - an isochronous interface, for transmitting and receiving said stream data, connected with said rate conversion unit.
 - 2. (Previously presented) The network switching system according to Claim 1, wherein at least one said extension node further comprises:
 - a microphone for inputting said stream data;
 - a speaker for outputting said stream data; and
 - a codec, for encoding and decoding said stream data, connected with said microphone, said speaker and said rate conversion unit for encoding and decoding said stream data.
 - 3. (Previously presented) The network switching system according to Claim 1, wherein at least one said extension node further comprises:

Serial No. 09/545,888
Docket No. F-10110

3

a stream data take-in unit, for storing said stream data, connected with said rate conversion unit; and

a stream data processing unit, for processing said stream data, connected with said stream data take-in unit.

4. (Original) The network switching system according to Claim 1, wherein said asynchronous interface and said isochronous interface are connected with a bus manager which controls said asynchronous interface, said isochronous interface, said control/memory unit, and said rate conversion unit.

5. (Currently amended) A gateway, comprising:

a first switching unit for controlling extension nodes connected with a serial bus for isochronous transfer; and

a second switching unit for exchanging stream data between an outside line and said extension nodes,

wherein:

said first switching unit comprises a server bus manager connected with an asynchronous interface and an isochronous interface,

said second switching unit comprises a line manager connected with a codec and a control/memory unit,

said line manager exchanges said stream data between said outside line and at least one of said extension nodes, according to a request from said bus manager,

said server bus manager manages a call-in to said extension node and a call-out from said extension node, and

each of said at least one extension node is selectively uniquely identified by a unique telephone number.

6. (Currently amended) An information terminal, comprising:

a telephone for transmitting and receiving a telephone signal through a serial bus;

a television (TV) set for receiving a TV signal through said serial bus; and

a bus manager for controlling said serial bus,

Serial No. 09/545,888
Docket No. F-10110

4

wherein said bus manager comprises two pairs of an asynchronous interface and an isochronous interface for said telephone signal and said TV signal, respectively, and said information terminal includes a memory to store a telephone number selectively unique to said information terminal.

7. (Currently amended) A gateway comprising:

a telephone gateway;

a TV gateway; and

a server bus manager connected to said telephone gateway and said TV gateway,
wherein:

said telephone gateway transfers a telephone signal from a public switched telephone network to a serial bus, and transfers a telephone signal from said serial bus to said public switched telephone network, said telephone gateway having a capacity to interconnect to at least one telephone terminal via said serial bus, wherein the interconnect is controlled by a telephone number identification of such that each of said at least one telephone terminal selectively has a unique telephone number;

said TV gateway receives a TV signal from a TV line, and transfers said TV signal to said bus manager; and

said bus manager comprises two pairs of an asynchronous interface and an isochronous interface for transferring said telephone signal and said TV signal, respectively.

8. (Currently amended) A call-in signal processing method for a network switching system using asynchronous and isochronous transfer modes, wherein stream data transferred on a serial bus are exchanged through a gateway between an outside line and an extension node, or between a first extension node and a second extension node, said method comprising:

selecting, at said gateway, which of an automatic transfer by a number display, a global call-in, or a manual call-in on the basis of setup data;

calling one or more extension nodes, each said extension node selectively having a unique telephone number;

Serial No. 09/545,888
Docket No. F-10110

5

securing one or more isochronous channels on the basis of responses from said extension nodes;

allowing said extension nodes to start exchanging said stream data;

sending simultaneously a call status of a station of which call status is changed to all the extension nodes connected with said serial bus.

9. (Currently amended) A call-out signal processing method for a network switching system using asynchronous and isochronous transfer modes, wherein stream data transferred on a serial bus is exchanged through a gateway between an outside line and an extension node, or between a first extension node and a second extension node, said method comprising:

receiving, at said gateway, a call-out from an extension node;

confirming, at said gateway, a call status of a call object;

securing an isochronous channel for transmission;

sending said call status to all the extension nodes connected to said gateway, each said extension node selectively having a unique telephone number;

securing an isochronous channel for reception;

allowing said call object to start exchanging said stream data, when said call object has responded, while sending, to said extension node which carried out said call-out, a call status that indicates that said call object does not respond, when said call object has not responded;

releasing said isochronous channels for transmission and reception, when detecting an on-hook of said extension node which has made said call-out; and

sending said call status to all the extension nodes connected to said gateway.

10. (Previously presented) The network switching system of claim 1, wherein each of said first extension node and said second extension node is uniquely identified by a telephone number.

Serial No. 09/545,888
Docket No. F-10110

6

11. (Previously presented) The network switching system of claim 1, wherein said serial bus comprises an IEEE 1394 data bus.

12. (Previously presented) The network switching system of claim 1, further comprising:

a resource manager for preparing a control table for storing physical identifiers and telephone numbers of said at least one extension node, said control table being automatically recalculated whenever said serial bus is reset.

13. (Previously presented) The gateway of claim 5, further comprising:

a resource manager to prepare and store a control table of the physical identification and telephone numbers of said extension nodes, said control table being automatically updated whenever a bus controlled by said server bus manager is reset, thereby to provide a plug and play feature.

14. (Previously presented) The information terminal of claim 6, further comprising:

a plug and play feature, wherein said memory to store a telephone number is automatically updated whenever said serial bus is reset.

15. (Previously presented) The information terminal of claim 6, wherein billing information for a digital television service is sent through said asynchronous interface.

16. (Currently amended) A method of providing a plug and play capability to controlling a network switching system wherein stream data transferred on a serial bus are exchanged through a gateway between an outside line and and one or more extension nodes, or between a first extension node and a second extension node, each said one or more extension nodes selectively having a unique physical identifier and a unique telephone number, said method comprising:

providing a control table to prepare and store said physical identifiers and telephone numbers;

broadcasting said control table to each said extension node; and

Serial No. 09/545,888
Docket No. F-10110

7

automatically recalculating said control table whenever said bus between said gateway and each said extension node is reset.

17. (Previously presented) The method of claim 16, further comprising:

automatically broadcasting the recalculated control table to each said extension node; and

automatically receiving an updated control table in each said extension node and updating a memory in said each extension node.

18. (Previously presented) The network switching system of claim 7, wherein each of said at least one telephone terminal is uniquely identified by a telephone number.

19. (Previously presented) The network switching system of claim 8, wherein each of said first extension node and said second extension node is uniquely identified by a telephone number.

20. (Previously presented) The network switching system of claim 9, wherein each of said first extension node and said second extension node is uniquely identified by a telephone number.